

## WHAT IS CLAIMED IS:

1. An apparatus for providing group voice services in a wireless network, comprising:
  - 5 a real-time exchange that interfaces to the wireless network to provide a full-duplex Push-to-Conference (P2C) session between an initiator and two or more other participants, wherein the P2C session comprises a full-duplex conference call, and both the real-time exchange and handsets participating in the P2C session communicate with each other using call setup and in-band signaling within the
  - 10 wireless network.
2. The apparatus of claim 1, wherein the participants comprise one or more contacts, one or more groups of contacts, or a subset of a group of contacts.
- 15 3. The apparatus of claim 1, wherein the initiator initiates the full-duplex P2C session by invoking "Push-to-Conference" on their handset.
4. The apparatus of claim 1, wherein the initiator upgrades an established half-duplex Push-to-Talk (P2T) session to the full-duplex P2C session by invoking
- 20 "Upgrade to Conference" on their handset.
5. The apparatus of claim 1, wherein the initiator's handset signals the real-time exchange via the wireless network, and the real-time exchange initiates and manages the full-duplex P2C session.
- 25 6. The apparatus of claim 1, wherein the real-time exchange causes the wireless network to perform call setup with the other participants for the full-duplex P2C session, and the real-time exchange initiates and manages the full-duplex P2C session.

7. The apparatus of claim 1, wherein the real-time exchange causes the wireless network to signal the other participants to join the full-duplex P2C session.

5 8. The apparatus of claim 1, wherein the other participants invoke "Join Conference" on their handsets to join the full-duplex P2C session.

9. The apparatus of claim 1, wherein the real-time exchange mixes audio streams from the initiator and other participants, and delivers these mixed audio  
10 streams to the initiator and other participants.

10. The apparatus of claim 1, wherein the initiator and other participants can choose to remain silent by invoking a "mute" option on their handsets, which causes the handset's microphone to be muted.

15 11. The apparatus of claim 1, wherein the initiator can add or drop participants during the full-duplex P2C session.

12. The apparatus of claim 1, wherein the initiator can downgrade the full-  
20 duplex P2C session to a half-duplex P2T session.

13. The apparatus of claim 1, wherein all charges related to the full-duplex P2C session are charged to the initiator.

25 14. The apparatus of claim 1, wherein the full-duplex P2C session is terminated when the initiator disconnects the call, even if the other participants do not disconnect.

15. The apparatus of claim 1, wherein the initiator and other participants in the full-duplex P2C session are all charged for usage.

16. The apparatus of claim 1, wherein the full-duplex P2C session  
5 continues when the initiator disconnects the call, if at least two of the other participants do not disconnect.

17. An apparatus for providing group voice services in a wireless network,  
10 comprising:

a real-time exchange coupled to a Push-to-Message (P2M) server, wherein the real-time exchange interfaces to the wireless network, and the real-time exchange and the P2M server work together to deliver multimedia messages in a non-real time manner from an originator to one or more recipients, without establishing voice paths  
15 between the originator and recipients.

18. The apparatus of claim 17, wherein the P2M server provides a message storage facility for the multimedia messages.

19. The apparatus of claim 18, wherein the P2M server interfaces to a voice mail server to provide a message storage facility for the multimedia messages.

20. The apparatus of claim 17, wherein the recipients comprise one or more contacts, one or more groups of contacts, or a subset of a group of contacts.

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21. The apparatus of claim 17, wherein the multimedia messages are scheduled for delivery at a specific time.

22. The apparatus of claim 17, wherein the P2M server performs authentication, extracts the recipient's information from the multimedia message, and stores the multimedia message.

5 23. The apparatus of claim 17, wherein the P2M server performs a query to one or more real-time exchanges to obtain the recipient's status.

24. The apparatus of claim 17, wherein the P2M server forms a new message that contains information to retrieve the multimedia message.

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25. The apparatus of claim 24, wherein the new message is sent to online recipients.

15 26. The apparatus of claim 24, wherein the new message is stored for later delivery to offline recipients.

27. The apparatus of claim 24, wherein a P2M client executed by a handset registers with the P2M server when the handset is powered on, at which time the new messages are delivered to the P2M client.

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28. The apparatus of claim 27, wherein the P2M client receives a notification of the new message, and then retrieves the new message.

25 29. The apparatus of claim 27, wherein the P2M client provides an alert notification of the new message.

30. The apparatus of claim 27, wherein the P2M client requests delivery of the multimedia message stored by the P2M server using the new message.

31. The apparatus of claim 27, wherein the P2M client plays or displays the multimedia message upon receipt of the P2M message.

5 32. The apparatus of claim 27, wherein the P2M client and the P2M server provide message inbox functionality to allow for storage, play back, reply, delete or forwarding of messages.

10 33. The apparatus of claim 27, wherein the P2M client and the P2M server provide message fragmentation and reassembly to enable exchange of long duration multimedia messages.

34. An apparatus for providing voice services in a wireless network, comprising:  
15 a handset that interfaces to the wireless network to provide the voice services between a user and one or more destinations, wherein call setup involves zero delay.

20 35. The apparatus of claim 34, wherein the user starts talking immediately upon initiation of the call setup, the user's speech is buffered by the handset, and the buffered speech is forwarded to the destination upon completion of the call setup.

36. The apparatus of claim 35, wherein the user starts talking immediately upon receiving a confirmation signal.

25 37. The apparatus of claim 35, wherein the handset receives an error signal if one or more of the destinations is unavailable.

38. The apparatus of claim 35, wherein the user receives an error signal if the user does not control a floor for group services.

39. The apparatus of claim 35, wherein the user's speech is buffered by the handset for a specified duration.

5           40. The apparatus of claim 39, wherein the specified duration is determined by a user preference.

41. The apparatus of claim 39, wherein the specified duration comprises a time period required to complete the call setup.

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42. The apparatus of claim 39, wherein the specified duration comprises a time period between the user pressing and releasing a button on the handset.